ABSTRACT

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Title of diploma thesis: Apoptosis and its role in selected human diseases

Apoptosis, which represents a specific form of programmed cell death, is an essential physiological process. It is very important for the organism's developement and for the maintenance of tissue homeostasis. It is a highly regulated process that is always triggered by a definite signal. This signal activates specific apoptotic pathways, a series of mechanisms that subsequently lead to cellular decline.

The dysregulation of apoptosis is associated with a variety of pathological conditions such as cancer, some disorders of the immunty system or of the cardiovascular system, or neurological diseases. To the last mentioned belong neurodegenerative disorders that are characteristic of the decline of selective neuronal populations. Examples of these are Alzheimer's and Parkinson's disease. Although its pathogenesis is still not fully elucidated, many studies indicate that the loss of neurons could be tightly related to excessive apoptotic activity. In spite of some discrepancies apoptosis can therefore be expected to an important part of the pathogenesis of these illnesses.

Nowadays, Alzheimer's and Parkinson's disease are some of the major medical problems. While the incidence of these disorders is considerably growing, no effective treatement exists yet. For that reason, intensive research of new therapeutic possibilities is done. One of the important areas of such resaerch is the study of potential antiapoptotic therapy. Although the treshold of clinical evaluation in this respect has not been exceeded yet, the importance of the role of apoptosis as a potential therapeutic target for these diseases is growing.